



NCR: Yes / No

DQA: Date:

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|   |  |      |   |   |   |  |                   |   |  |             |              |  |  |   |  |
|---|--|------|---|---|---|--|-------------------|---|--|-------------|--------------|--|--|---|--|
| Work Order: _____<br>Part No. _____<br>NCR No. _____  |  |      | <b>DISPOSITION</b><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |   | <b>AGAINST DEPARTMENT/PROCESS</b><br>Skid-tube <input type="checkbox"/><br>Machining <input type="checkbox"/><br>Thermoforming <input type="checkbox"/><br>Large Fab <input type="checkbox"/><br>Crosstube <input type="checkbox"/><br>Small Fab <input type="checkbox"/><br>Finishing <input type="checkbox"/><br>Composite <input type="checkbox"/><br>Water Jet <input type="checkbox"/><br>Prod. Eng. Coor. <input type="checkbox"/><br>Rec/Store/Packaging <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Engineering <input type="checkbox"/><br>Quality <input type="checkbox"/><br>Other <input type="checkbox"/> |  |                   |   |  |             |              |  |  |   |  |
| <b>Root Cause</b><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Material <input type="checkbox"/><br>Setup <input type="checkbox"/><br>Other <input type="checkbox"/><br>Process <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Unapproved <input type="checkbox"/> |  | Date | Step  | Qty   | Description of work order update or Non-conformance   |  | Initial Chief Eng | Action Description  |  | Sign & Date | Verification | QC Inspector   |  |   |  |
| <b>FAULT CATEGORY</b>   |  |      |   |   |   |  |                   |   |  |             |              |  |  |   |  |
| <b>Landing Gear</b><br>Bending<br>Centre Not Concentric to O/S<br>Cracks<br>Crushed/Crimped.<br>Cuffs<br>Heat Treat<br>Inspection Strip in Tube<br>Ripples in Bend<br>Torque Waves in Extrusion<br>Turning Sequence<br>Wave/Twist in Tube   |  |      |   | <b>General</b><br>Bend <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damaged <input type="checkbox"/><br>Burrs <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Drill Holes <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Folio <input type="checkbox"/> |   |  |                   | Grain <input type="checkbox"/><br>Hardware <input type="checkbox"/><br>Inspection Incomplete <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Maintenance <input type="checkbox"/><br>Mislabeled <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Offset <input type="checkbox"/><br>Out of Calibration <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/> |  |             |              | Ovalized <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Positioned Wrong <input type="checkbox"/><br>Power Loss/Surge <input type="checkbox"/> |  | Pressure/Forced <input type="checkbox"/><br>Temperature/Cure <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br><br><input type="checkbox"/> Other |  |

**Work Order ID 107933**

October-07-13 9:02:39 AM

**\*107933\***

Page 2

Item ID: D3016-15

Accept

**\*N900040100\***

Setup

Start

**\*NS1\***

Revision ID:

Item Name: Gusset

Stop

**\*NS2\***

Start Date: 10/07/13 Start Qty: 6.00

**\*6\***

Cust Item ID:

Required Date: 10/07/13 Req'd Qty: 6.00

**\*6\***

Customer:

Reference:

Approvals:

Process Plan:

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run

Start

**\*NR1\***

QC:

Date: \_\_\_\_\_

SPC (Y/N):

Date: \_\_\_\_\_

Stop

**\*NR2\***Sequence ID/  
Work Center ID

130

**\*130\***

Packaging

Packaging

Operation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

0.00

DAS

32

9-69

13/12/10 (6)

Packaging

Memo

0.00

Identify and bag with light oil (Vactra oil #2), then Stock \*\*\*\*\*STOCK IN  
LARGE FAB\*\*\*\*\*Location: *WACO 2*

140

**\*140\***

QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

*JFM 13/12/11**13-12-10*

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| Work Order: _____ |   | DISPOSITION                                |  | AGAINST DEPARTMENT/PROCESS                          |  |                                      |                    |             |   |              |  |
|-------------------|---|--|--|---|--|--------------------------------------|--------------------|-------------|---|--------------|--|
| Part No. _____    |   | Rework <input type="checkbox"/>            | Skid-tube <input type="checkbox"/>                       | Crosstube <input type="checkbox"/>                  | Water Jet <input type="checkbox"/>           | Engineering <input type="checkbox"/> |                    |             |   |              |  |
| NCR No. _____     |   | Scrap <input type="checkbox"/>             | Machining <input type="checkbox"/>                       | Small Fab <input type="checkbox"/>                  | Prod. Eng. Coor. <input type="checkbox"/>    | Quality <input type="checkbox"/>     |                    |             |   |              |  |
|                   |   | Use-as-is <input type="checkbox"/>         | Thermoforming <input type="checkbox"/>                   | Finishing <input type="checkbox"/>                  | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/>       |                    |             |   |              |  |
|                   |   | Work Order Update <input type="checkbox"/> | Large Fab <input type="checkbox"/>                       | Composite <input type="checkbox"/>                  | Supplier <input type="checkbox"/>            |                                      |                    |             |   |              |  |
| Root Cause        | Date  | Step                                       | Qty  | Description of work order update or Non-conformance |  | Initial Chief Eng                    | Action Description | Sign & Date | Verification                                | QC Inspector |  |
| Doc/Data          |   |  |  |   |  |                                      |                    |             |   |              |  |
| Equip/Tooling     |   |  |  |   |  |                                      |                    |             |   |              |  |
| Operator          |   |  |  |   |  |                                      |                    |             |   |              |  |
| Material          |   |  |  |   |  |                                      |                    |             |   |              |  |
| Setup             |   |  |  |   |  |                                      |                    |             |   |              |  |
| Other             |   |  |  |   |  |                                      |                    |             |   |              |  |
| Process           |   |  |  |   |  |                                      |                    |             |   |              |  |
| Supplier          |   |  |  |   |  |                                      |                    |             |   |              |  |
| Training          |   |  |  |   |  |                                      |                    |             |   |              |  |
| Unapproved        |   |  |  |   |  |                                      |                    |             |   |              |  |
| FAULT CATEGORY    |   |  |  |   |  |                                      |                    |             |   |              |  |
| Landing Gear      | General   |  |  |   |  |                                      |                    |             |   |              |  |
|                   | Bending <input type="checkbox"/>                      | Bend <input type="checkbox"/>              | Grain <input type="checkbox"/>                           | Ovalized <input type="checkbox"/>                   |  |                                      |                    |             | Pressure/Forced <input type="checkbox"/>    |              |  |
|                   | Centre Not Concentric to O/S <input type="checkbox"/> | BOM/Route <input type="checkbox"/>         | Hardware <input type="checkbox"/>                        | Over/Under tolerance <input type="checkbox"/>       |  |                                      |                    |             | Temperature/Cure <input type="checkbox"/>   |              |  |
|                   | Cracks <input type="checkbox"/>                       | Broken/Damaged <input type="checkbox"/>    | Inspection Incomplete <input type="checkbox"/>           | Part Incorrect <input type="checkbox"/>             |  |                                      |                    |             | Weld <input type="checkbox"/>               |              |  |
|                   | Crushed/Crimped. <input type="checkbox"/>             | Burrs <input type="checkbox"/>             | Instructions Incomplete/Unclear <input type="checkbox"/> | Part Lost/Missing <input type="checkbox"/>          |  |                                      |                    |             | Wrong Stock Pulled <input type="checkbox"/> |              |  |
|                   | Cuffs <input type="checkbox"/>                        | Contamination <input type="checkbox"/>     | Maintenance <input type="checkbox"/>                     | Part Moved <input type="checkbox"/>                 |  |                                      |                    |             |   |              |  |
|                   | Heat Treat <input type="checkbox"/>                   | Countersink <input type="checkbox"/>       | Mislabeled <input type="checkbox"/>                      | Positioned Wrong <input type="checkbox"/>           |  |                                      |                    |             |   |              |  |
|                   | Inspection Strip in Tube <input type="checkbox"/>     | Cut Too Short <input type="checkbox"/>     | Misread <input type="checkbox"/>                         | Power Loss/Surge <input type="checkbox"/>           |  |                                      |                    |             |   |              |  |
|                   | Ripples in Bend <input type="checkbox"/>              | Drill Holes <input type="checkbox"/>       | Offset <input type="checkbox"/>                          |   |  |                                      |                    |             | Other <input type="checkbox"/>              |              |  |
|                   | Torque Waves in Extrusion <input type="checkbox"/>    | Drawing <input type="checkbox"/>           | Out of Calibration <input type="checkbox"/>              |   |  |                                      |                    |             |   |              |  |
|                   | Turning Sequence <input type="checkbox"/>             | Finish <input type="checkbox"/>            | Out of Sequence <input type="checkbox"/>                 |   |  |                                      |                    |             |   |              |  |
|                   | Wave/Twist in Tube <input type="checkbox"/>           | Folio <input type="checkbox"/>             | Outside Dimensions <input type="checkbox"/>              |   |  |                                      |                    |             |   |              |  |

# Picklist Print

October-07-13 9:02:38 AM

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|                   |  |             |          |                |          |  |
|-------------------|--|-------------|----------|----------------|----------|--|
| Work Order ID:    | 107933   | Start Date: | 10/07/13 | Required Date: | 10/07/13 |  |
| Parent Item:      | D3016-15   | Start Qty:  | 6.00     | Required Qty:  | 6.00     |  |
| Parent Item Name: | Gusset   |             |          |                |          |  |
| Comments:         | IPP B03.05.09ReformatKJ/RF<br>IPP Rev:C 08-04-11 now made on water jet DD verified by:EC |             |          |                |          |  |

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty     | Qty<br>Issued | Date<br>Issued | Status    |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|------------------|---------------|----------------|-----------|
| M4130NS.049<br>4130Sheet .049   |                        | Purchased     | No          |                     |                  | 100             | sf                 | 118.3903       | 0.0486      | 0.2069474<br>0.5 |               |                | Jm,3-12-9 |

| Location | Loc Qty    | Loc Code |
|----------|------------|----------|
| MAT020   | 118.390263 |          |
| 11612    | 4.2        |          |
| 123049   | 17.340263  |          |
| 124283   | 96.85      | 124283   |

NCR: Yes / No

DQA: Date:

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|  |  |      |      |   |  |  |  |   |             |  |              |
|--|--|------|------|---|--|--|--|---|-------------|--|--------------|
| Work Order: _____<br>Part No. _____<br>NCR No. _____   |  |      |      | DISPOSITION   |  | AGAINST DEPARTMENT/PROCESS   |  |   |             |  |              |
|  |  |      |      | Rework<br>Scrap<br>Use-as-is<br>Work Order Update   | Skid-tube<br>Machining<br>Thermoforming<br>Large Fab | Crosstube<br>Small Fab<br>Finishing<br>Composite   | Water Jet<br>Prod. Eng. Coor.<br>Rec/Store/Packaging<br>Supplier | Engineering<br>Quality<br>Other   |             |  |              |
| Root Cause   |  | Date | Step | Qty   | Description of work order update or Non-conformance  |  | Initial Chief Eng  | Action Description  | Sign & Date | Verification   | QC Inspector |
| Doc/Data   |  |      |      |   |  |  |  |   |             |  |              |
| Equip/Tooling  |  |      |      |   |  |  |  |   |             |  |              |
| Operator   |  |      |      |   |  |  |  |   |             |  |              |
| Material   |  |      |      |   |  |  |  |   |             |  |              |
| Setup  |  |      |      |   |  |  |  |   |             |  |              |
| Other  |  |      |      |   |  |  |  |   |             |  |              |
| Process  |  |      |      |   |  |  |  |   |             |  |              |
| Supplier   |  |      |      |   |  |  |  |   |             |  |              |
| Training   |  |      |      |   |  |  |  |   |             |  |              |
| Unapproved   |  |      |      |   |  |  |  |   |             |  |              |
| <b>FAULT CATEGORY</b>  |  |      |      |   |  |  |  |   |             |  |              |
| Landing Gear<br>Bending<br>Centre Not Concentric to O/S<br>Cracks<br>Crushed/Crimped.<br>Cuffs<br>Heat Treat<br>Inspection Strip in Tube<br>Ripples in Bend<br>Torque Waves in Extrusion<br>Turning Sequence<br>Wave/Twist in Tube |  |      |      | General<br>Bend<br>BOM/Route<br>Broken/Damaged<br>Burrs<br>Contamination<br>Countersink<br>Cut Too Short<br>Drill Holes<br>Drawing<br>Finish<br>Folio |  | Grain<br>Hardware<br>Inspection Incomplete<br>Instructions Incomplete/Unclear<br>Maintenance<br>Mislabeled<br>Misread<br>Offset<br>Out of Calibration<br>Out of Sequence<br>Outside Dimensions |  | Ovalized<br>Over/Under tolerance<br>Part Incorrect<br>Part Lost/Missing<br>Part Moved<br>Positioned Wrong<br>Power Loss/Surge |             | Pressure/Forced<br>Temperature/Cure<br>Weld<br>Wrong Stock Pulled<br><br>Other |              |

|  |                     |                    |
|--|---------------------|--------------------|
| <b>DART AEROSPACE LTD</b>                  | <b>Work Order:</b>  | <u>107933</u>      |
| <b>Description:</b> Gusset                 | <b>Part Number:</b> | <u>D3016-15</u>    |
| <b>Inspection Dwg:</b> D3016 <b>Rev:</b> A |                     | <b>Page 1 of 1</b> |

# FIRST ARTICLE INSPECTION CHECKLIST

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9

|                        |                         |                       |
|------------------------|-------------------------|-----------------------|
| Measured by: <u>Jm</u> | Audited by: <u>9-89</u> | Preliminary Approval: |
| Date: <u>13-12-09</u>  | Date: <u>13/12/10</u>   | Date:                 |

| Rev | Date     | Change    | Revised by | Approved   |
|-----|----------|-----------|------------|--|
| A   | 11.04.28 | New Issue | KJ         | <br> |

**DART**

|                     |                       |   |                        |
|---------------------|-----------------------|---|------------------------|
| DESIGN<br><i>CP</i> | DRAWN BY<br><i>CP</i> | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA |                        |
| CHECKED<br><i>#</i> | APPROVED<br><i>#</i>  | DRAWING NO.<br>D3016                              | REV. A<br>SHEET 1 OF 3 |
| DATE<br>01.05.18    |                       | TITLE<br>SEAT FRAME ASSEMBLY                      | SCALE<br>NTS           |
| A                   | 01.05.18              | NEW ISSUE   |                        |

| QTY | PART NUMBER | DESCRIPTION         | MATERIAL   |
|-----|-------------|---------------------|--|
| X   | D3016-041   | SEAT FRAME ASSEMBLY | N/A  |
| 1   | D3016-1     | TUBE                | AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049) |
| 2   | D3016-3     | TUBE                | AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049) |
| 1   | D3016-5     | TUBE                | AISI 4130N TUBE, Ø0.50 DIA x 0.049 WALL (M4130N-T0500W049) |
| 2   | D3016-7     | TUBE                | AISI 4130N TUBE, Ø0.50 DIA x 0.049 WALL (M4130N-T0500W049) |
| 1   | D3016-9     | SADDLE              | AISI 4130N TUBE, Ø1.00 DIA x 0.120 WALL (M4130N-T1000W120) |
| 1   | D3016-11    | SADDLE              | AISI 4130N TUBE, Ø1.00 DIA x 0.120 WALL (M4130N-T1000W120) |
| 1   | D3016-13    | BRACKET             | AISI 4130N SHEET, 18 GAUGE (M4130N-S049)                   |
| 1   | D3016-15    | GUSSET              | AISI 4130N SHEET, 18 GAUGE (M4130N-S049)                   |
| 1   | D3016-17    | GUSSET              | AISI 4130N SHEET, 18 GAUGE (M4130N-S049)                   |
| 2   | D3020-1     | FITTING             | N/A  |

**NOTES**

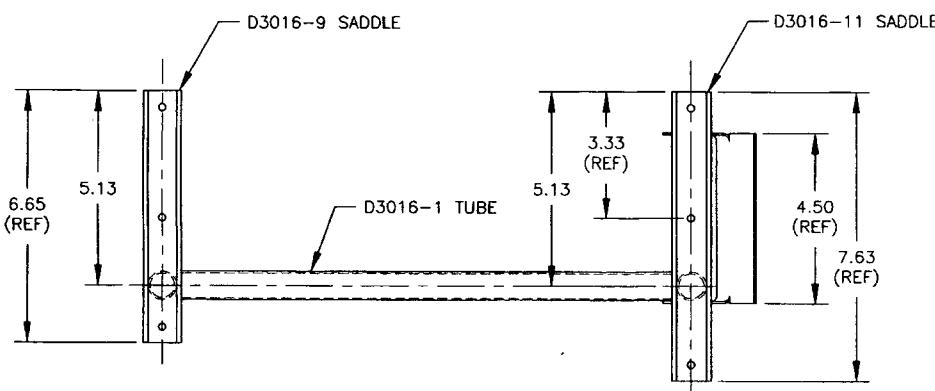
- 1) WELD PER DART QSI 004
- 2) ON SHEET METAL PARTS, BREAK ALL UNMARKED CORNERS 0.020-0.040
- 3) FINISH: POWDER COAT GREY SANTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

**DEO ATTACHED**
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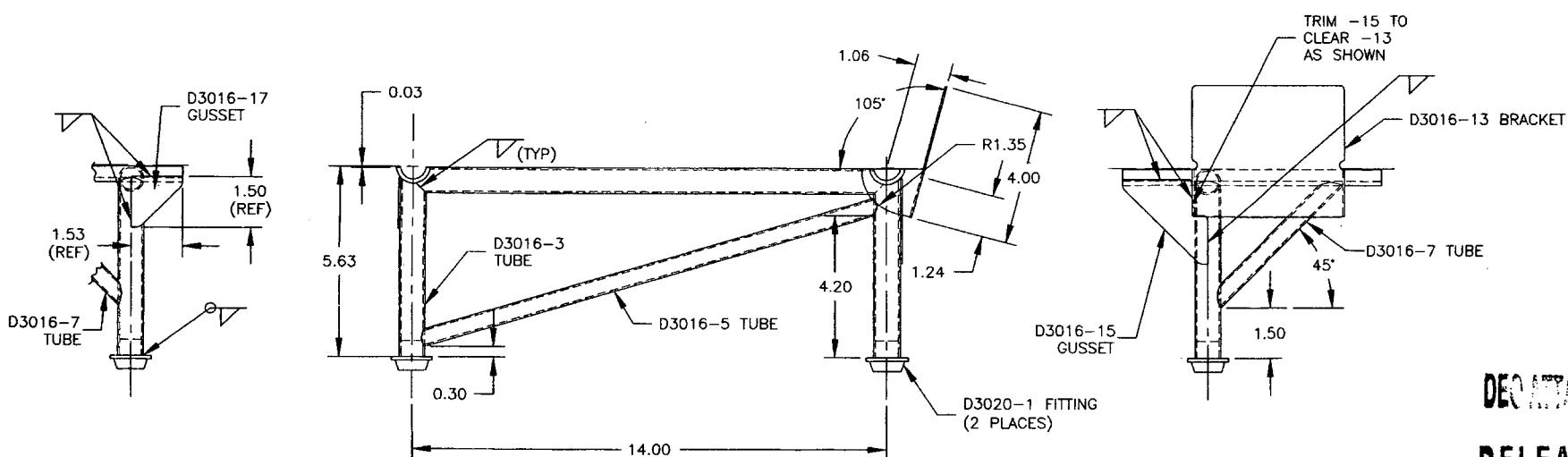
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107933

D3016-041 SEAT FRAME ASSEMBLY



107933 MJS  
13-10-09



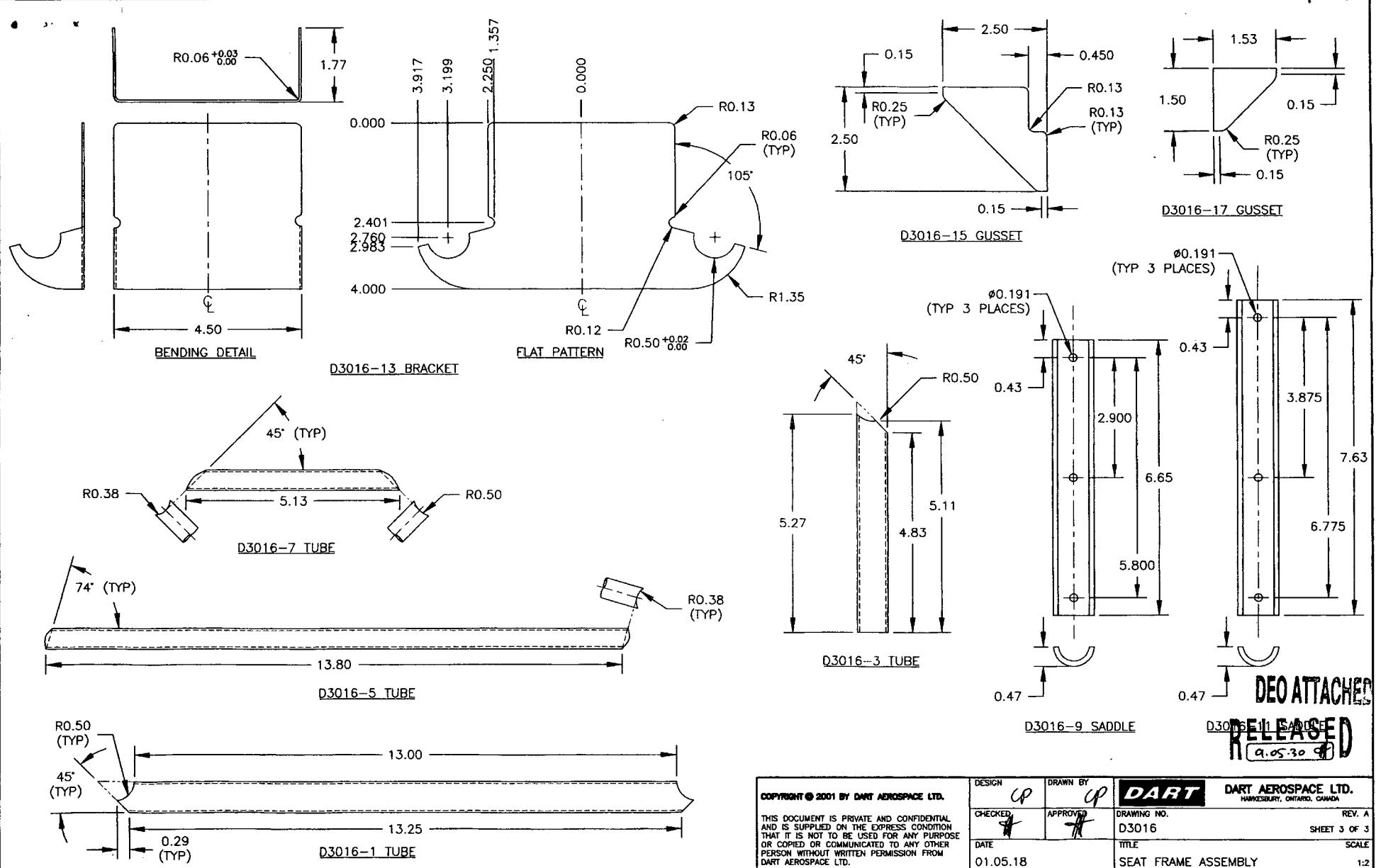
DET ATTACHED

RELEASED  
01.05.18

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DART AEROSPACE LTD.

| DESIGN   | DRAWN BY | DART | DART AEROSPACE LTD.<br>HANDBURY, ONTARIO, CANADA |
|----------|----------|------|--|
| CP       | CP       | CP   | REV. A   |
| CHECKED  | APPROVED | CP   | DRAWING NO.<br>D3016                             |
|          |          |      | SHEET 2 OF 3                                     |
| DATE     |          |      | SCALE  |
| 01.05.18 |          |      | 1:3  |
|          |          |      | SEAT FRAME ASSEMBLY                              |





107933

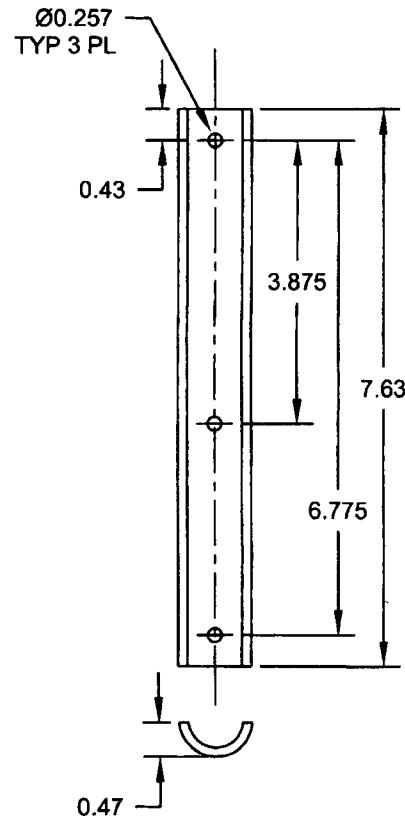
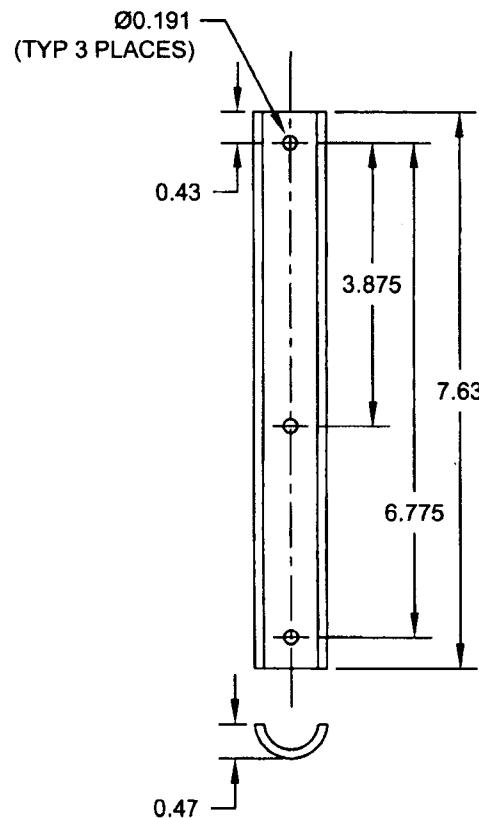
|                      |                              |                      |   |                         |                           |              |
|----------------------|------------------------------|----------------------|---|-------------------------|---------------------------|--------------|
| DRAWING NO.<br>D3016 | TITLE<br>SEAT FRAME ASSEMBLY | REV. A               | DART AEROSPACE LTD<br>ENGINEERING ORDER | D.E.O. NO.<br>D3016-A-1 | SHEET NO.<br>SHEET 1 OF 1 | SCALE<br>NTS |
| DRAWN <i>1</i>       | CHECKED <i>1P</i>            | MFG. APPR. <i>RE</i> | APPROVED <i>MAP</i>                     | DE APPR. <i>MAP</i>     |                           |              |
| DATE 10.01.29        | DATE 10.01.29                | DATE 10.01.29        | DATE 10.01.29                           | DATE 10.01.29           | DATE 10.01.29             |              |

**PURPOSE:**

TO REVISE D3016-11 SADDLE'S HOLE SIZES

**CHANGE:**

DETAIL D3016-11 SADDLE (SHEET 3): Ø0.257 TYP 3 PL WAS Ø0.191 (TYP 3 PLACES) AS SHOWN:

**IS:****D3016-11 SADDLE****WAS:****D3016-11 SADDLE**